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THE NEW YORK
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☞ *See Advertisement on last page.*

GEOGRAPHICAL HYMN.

TUNE—OLD HUNDRED.

Our world's a ball of wondrous size,
And onward rolls through trackless space,
Surrounded by the stars and skies,
Ends with twelve months—its circuit race.

A daily somerset it makes,
From West to East, as on it goes;
This gives us Day and Night—creates
Twelve hours for work—twelve for repose.

Twenty five thousand miles of road,
Out-side, will reach around this ball;
Through centre dig—the rocks explode—
Eight thousand miles of hole—is all.

This outside road *Circumf'rence* call;
When central—*Equator'al* Line;
Diameter—the tunnel'd hall;
Or—Chinese railroad—through the mine.

Water and land compose the face
Of this our rolling Sphere: and be
This truth well known to Adam's race:
The land's one part—the water three.

The land, by various names is known:
Isle, Continent, Isthmus and Cape;
Also the water—Sea, Ocean,
Gulf, Bay, Sound, Strait, Channel and Lake.

Circles—this earth are fancied on;
Divide the room—partition wall;
Colure, Equator, Horizon,
Are great—Tropics and Arctics small.

The Irish Emigrant's Lament.

Farewell to my home and its once happy hearth
Farewell to thee, Erin, thou land of my birth,
I leave thy green valleys and wander from thee
To seek for a home in the Land of the Free.

As o'er the wide waters the vessel shall fly,
And thy hills in the distance shall fade from my eye,
Afar and afar as each billow shall roll,
A sigh for thy beauties shall sadden my soul.

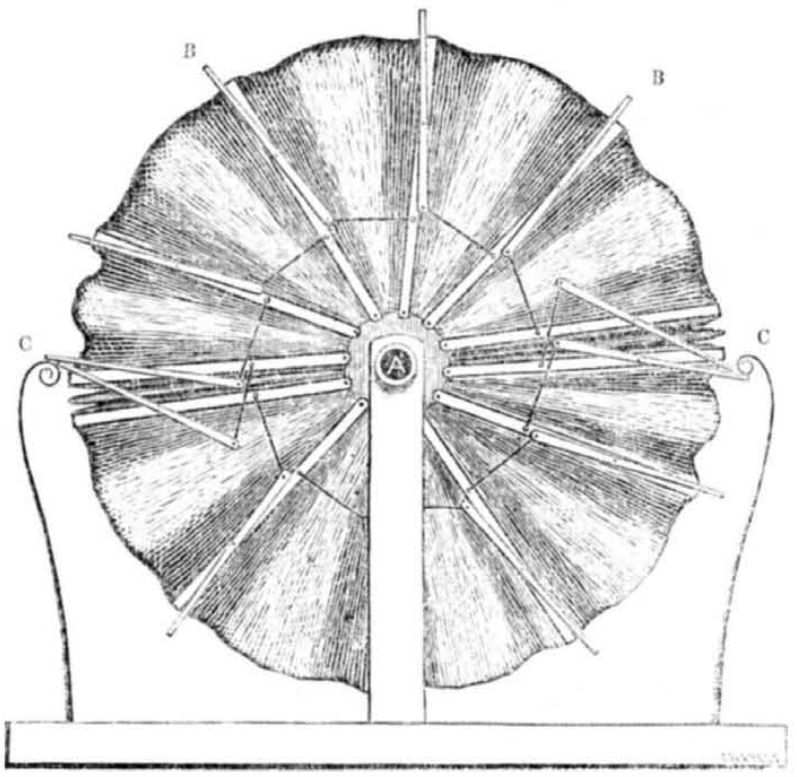
Fair land of my Love, where my childhood was nursed,
By nature embellished, by tyranny cursed,
Though stern necessity bids me depart,
Thou never, oh! never, shall fade from my heart!

See! the signal for sailing, yet still would I gaze
On the rocks which I climbed in happier days
Where I watched for the sea-bird and looked on the shore,
As it waked to the rush of the ocean's dread roar!

But the breeze and the billow forbid the delay,
The sail is unfurled, away and away;
I wander forever, green Erin! from thee,
To seek for a home in the Land of the Free.

The best American apples command eight dollars per barrel in the English markets.

ROTARY BELLOWS.



EXPLANATION.—A hollow horizontal shaft with tubular pivots A is mounted between two posts or other suitable bearings, the length of the shaft being about sixteen inches. To the ends of this cylinder near its periphery, a series of arms or rather bows, (B B &c.) are connected by small pivots. Each arm or bow extends from one end of the cylinder to the other, being connected at each end. It first extends out at right angles with the axle, about sixteen inches, and then turns horizontally an equal distance, and turns centreward to the rear end of the cylinder, making its entire length about four feet. These bows are made of iron or brass; and the area within each bow is filled with a thin board of corresponding dimensions, which constitutes a partition between the sections or air-chambers. The spaces between the partitions are enclosed with pliable leather, which passes between the bow and the board of each partition, and secured by nails driven through the bows and the leather into the board. The centreward edges of the leather are nailed to the ends of the cylinder. Thus the space between each two partitions constitutes a bellows. The cylinder has a partition dirk at its centre, which divides its interior space into equal parts; and on the periphery of the cylinder, are two clapper valves to each chamber, one of which opens inward and the other outward. It will be thus understood that when any two of the partitions are made to recede, a quantity of air is drawn through the rear tubular pivot into the chamber; and when the partitions are made to approach each other, the same quantity of air is forced out through the other valve and through the front pivot; and that if we can show an arrangement of operation by which a part of the chambers will be constantly collapsed while other chambers are being inflated, a constant blast of wind of any required force will issue from the orifice. It will be seen by the engraving that a small lever is attached by a pivot to each arm; and that the centreward end of each lever in conneted by a small connecting rod to the next, or succeeding arm; and that when by the rotary motion of the machine (bellows wheel or rotary bellows) the outward ends of these levers come in contact with the scroll-heads C C the two opposite horizontal chambers are thereby collapsed, while others above and below are thereby inflated. A set of these levers and connecting rods are attached to each side—front and rear,—of the bellows wheel, and the heads of each opposite pairs of levers, are connected by a horizontal cross-bar, which, in fact, is that which comes in contact with the scroll heads, and not the levers themselves.—The diameter of this wheel being three feet, it will blow about 15 cubic feet of air at each revolution. It is set in motion by a pulley and band.

A LIST OF PATENTS

Issued from the 26*th of December*, 1846, *to the* 2d *of January*, 1847, *inclusive.*

To Stephen F. Gates, of Boston, Mass. for improvement in side valves in Steam Engines. Patented Dec. 28, 1846.

To R. F. Stevens, & L. B. Pitcher, of Syracuse, New-York. for improvement in machinery for ascending inclined planes. Patented Dec. 28, 1846.

To Edward D. Tippett of Georgetown, D. C. for improvement in meat cutters. Patented Dec. 28, 1846.

James R. Stafford, of Cleaveland, Ohio, for improvement in Cooking Stove, Patented 28, 1846.

To Charles Baeder, of Philadelphia, Pa. for improvement in finishing raw hide whips.—Patented Dec. 28, 1846.

To Jeremiah Carhart, of Buffalo New-York, for improvement in Bellows for musical instruments. Patented Dec. 28, 1846.

To Etienne Maccaud, Echallens, Switzerland for improvement in Gas Apparatus. Patented Dec. 28, 1846.

To Chauncy Boardman & Joseph A. Wells, of Bristol, Conn. for improvement in clocks. Patented Jan. 2, 1847

To Francis Carter, of Washington, Va. for improvement in uterine supporters. Patented Jan. 2, 1847

To Clinton Foster, of Laporte, Indiana, for improvement in Harvesting Machines. Patented Jan. 2, 1847.

To Nathan Perkins, of Frederick Co., Va for improvement in Excavators far Roads &c. Patented Jan. 2, 1847.

To Ira Holmes, of Moscow, New York, for improvement in Carriage wheels. Patented Jan. 2, 1847.

"Pa," said a fashionably educated farmer's daughter, "if I should get married to a farmer, what should I do with my *French* ?"—"Call the chickens, Betsey, call the chickens."

Jokes and Quaintisms.

The following quaint items are not more than a thousand years old, and have never before appeared in this paper.

'Tim, you lazy fellow, what is the matter with you? Have you lost your tongue?'

'No I thank you, sir, I am not quite relieved from my *lie*-abilities.'

'Sambo, what o'clock be it?'

Fifty two minutes arter half past one: wat for you no keep a watch, yourself, not trouble gemmen?

O cause, my old oman patch my breechaloon pocket so all to pieces, I no place to keep one

'Vat is dat you say, sare? you say I be von dem rascale?' 'O! no sir; sartin sir, I never said so.'

'Vel den, I knows vat you tinks, you tinks I be vone dem villane, and I'll vhip you for dat.'

'My dinner don't agree with me,' complained a well fed husband. 'That is because you have been *jawing* it so hard,' replied his wife.

'Look here, Sambo; you got dat quarter dollar you owes me?'

'La! Cuff, no—money so scarce, so many stopperages in Mobile, there ain't no money in circumlation.'

'O, sho, Sambo, what de nashun you got to do wid Mobile? Nigger, poy up?'

'Well, look here, Cuff; me hear massa tell more dan twenty men dat same tale, and I ain't see no gentlemen, treat him like you do me. Act like a gemman, if you *is* a nigger'

'Tom, tell me the biggest lie that you ever told, and I will give you a mug of cider.'

'Me, I never told a lie in my life'

'That will do:—take the cider.'

John, Joe says you never said what I said you said; now if you did'nt say what I said you said, what did you say? 'Nuff said.'

'Mr. B.'s compliments to Mr. C; thinks it unnecessary his *piggs* should go through his ground.' Crief reply.

'Mr. C.'s compliments to Mr. B., thinks it unnecessary to spell pigs with two *gees* in making out a formal grumblement.'

A man who sat on a bridge with his feet in the water, was asked the reason why he did so, when he replied, 'I am to sing bass tomorrow, and am now endeavoring to take cold to prepare my voice.'

'Pray, Miss, don't eat me,' said a dandy to a young lady who had evinced some impatience at his impertinence. 'Don't be alarmed, sir, I am a Jewess,' was the lady's reply.

'That is really the smallest horse I ever saw,' said a countryman on viewing a Shetland poney. 'Indade now,' replied his Irish companion, 'but I've seen one as small as two of him."

A negro minister once observed to his hearers at the close of his sermon, as follows: 'My *obstinacious* bretheren, I find its no more use to preach to *you*, than it is for a grasshopper to wear kneebuckles.'

The "Crier" of a Massachusetts court was asleep. The judge, on a party becoming defaulted, cried out—'Call Ebenezer Fich, Esq. The Crier started from his slumbers to his feet, and sung out 'Ebenezer Squich-a-fire!' amid roars of laughter.

'Come Timon, get up my good boy; it is after sun rise.'

'What of dat, Massa? What if be sun yise? Spose if sun yise two hours before day, poor Timon must get up, cause sun yise, eh? Don't come dat game over dis nigger no how.'

'Did you not tell me this morass was hard at the bottom,' said a young horseman to a countryman, when his horse had sunk up to the saddle girth. 'Yes I did, but you are not half way to the bottom yet,' said the fellow.

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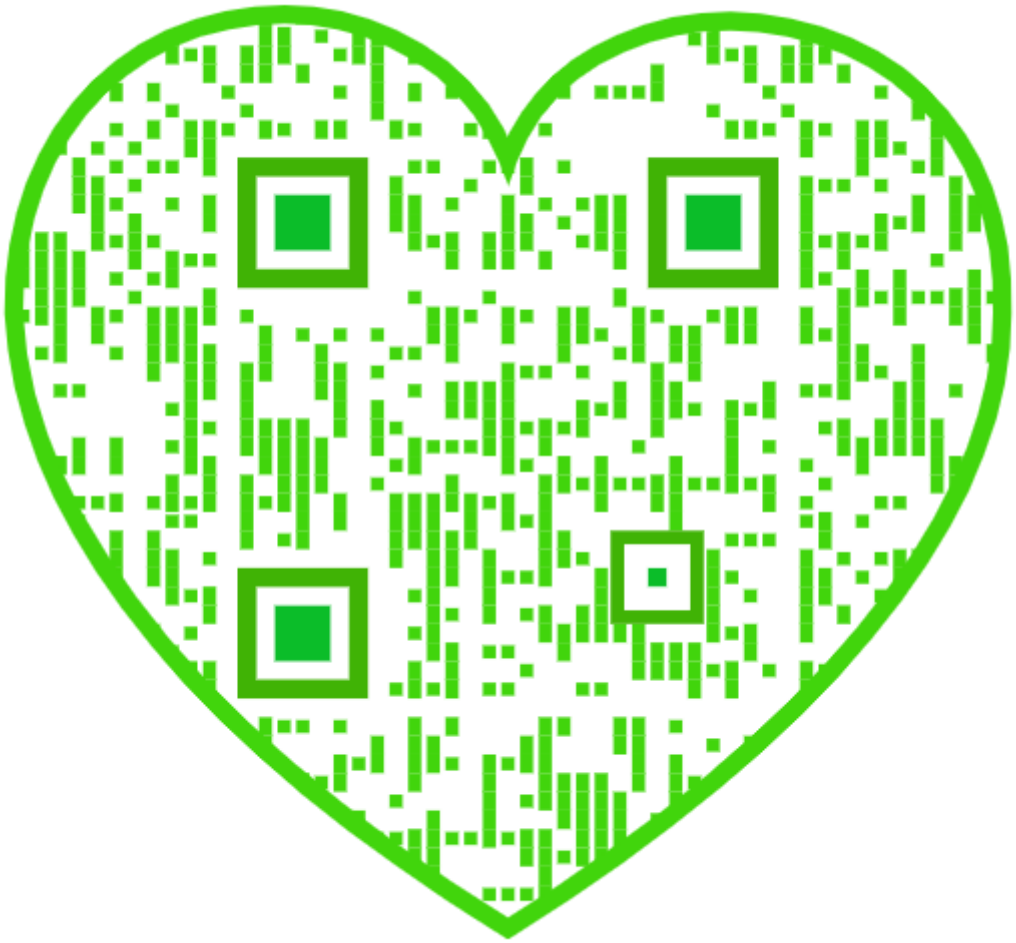

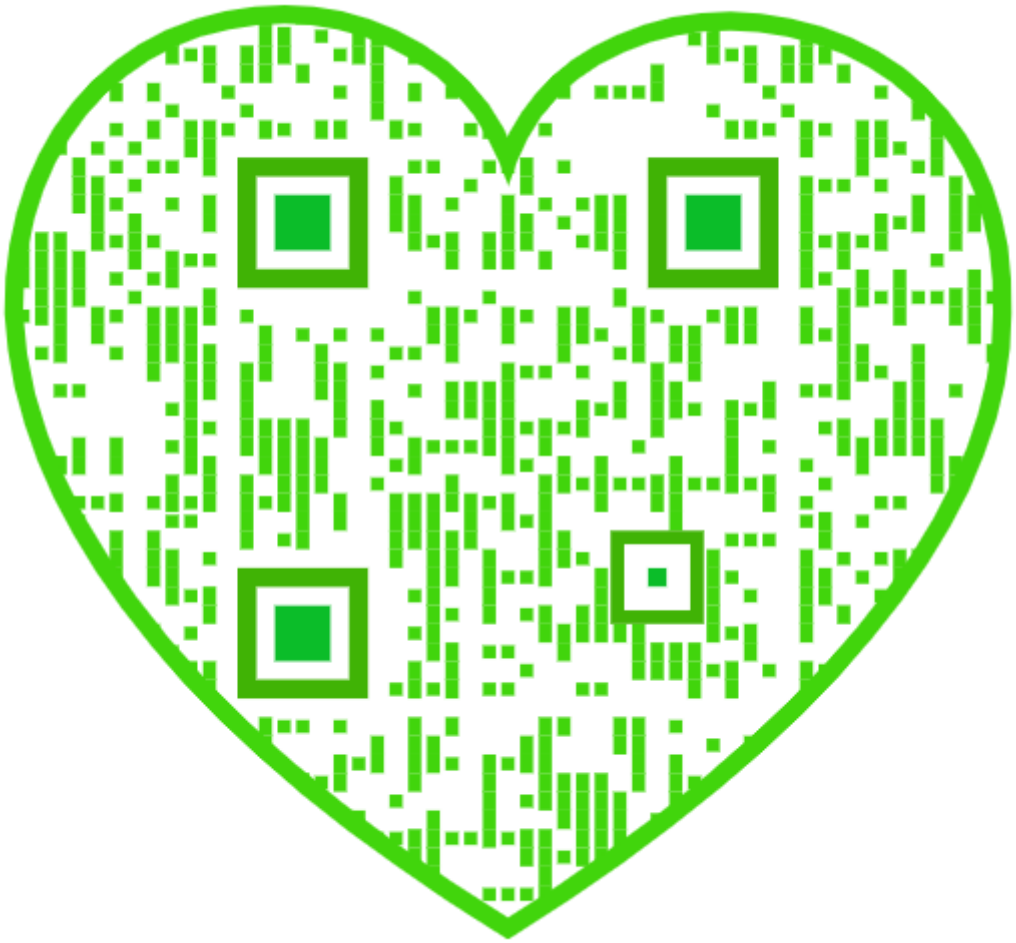

Wood Paving for Wheels.

A correspondent of the *Builder* suggests that wood paving should be laid in parallel lines, of such width and separation as may suit the different distances of the wheel, having narrow stripes of stone to preserve the edge, with a stone paved or macadamised road between them. That two lines be laid at each side of the road, the line nearest the middle to be twice the width of the other, to enable two wheels to pass upon it. If the road be wide enough, a line of double width in the middle will connect the other side ; so that with five lines of wood paving, four vehicles may pass abreast. If the road should be wide enough for three vehicles, then four lines will be sufficient. If there is room only for two vehicles, then three lines will be enough.

Lake Superior.

According to a writer in the Detroit Advertiser, more than six thousand men are engaged in exploring this region. Taverns well bestowed have taken the place of the wigwam; the press sends forth its living history of events transpiring on those shores, and well-instructed guides stand ready to conduct you to the charming scenes and wonders of capricious nature, where one's admiration will be blended with thoughts of the lamented Houghton who first opened its beauties to our gaze. If Robert de La Salle, says the writer, has the glory of opening the navigation of the lakes of the Algonquins, and familiarizing us with the Mississippi, to Houghton it was reserved to explore and bring to light the hidden places of this new and interesting region.

Plums.

This delicate fruit has suffered more than any other, except, perhaps, the peach, in New England. Mr. Jefferson Alden, of Chickopee Falls, informs us that he has tried the experiment of winding a tarred string about the trunk of the tree with very great success.—Last year he fixed several limbs in this way, and, as a consequence, those limbs were loaded with fruit, while the remainder of the tree was barren. This year he wound his cords about the trunk below the limbs, and his trees are all loaded with excellent fruit—the good quality of which we can attest from a liberal specimen sent us by Mr. A. We believe the same thing has been practised by others with similar success.—*Springfield Gaz.*

Sliding down Hill.

They have had some fine sleighing at Albany, and the streets became quite slippery before the farmers had got their horses sharpshod. The Knickerbocker mentions an instance of one who, coming in from the west, commenced stopping his team at the top of the hill in State street, near the capitol, but did not overcome his momentum till he was almost in the basin 200 yards below. Says the K., "Such a gitting *down* stairs we never did see." The off horse cut more "spread-eagles" than all the skaters on the Hudson.

Beauty employed to Advantage.

This is a *cafe* (coffee-room) upon the Boulevards in Paris, about which, from 9 o'clock in the morning until 11 at night, a crowd of men and women may be seen standing, looking through doors and windows at the *Dame de Comptoir*, a most beautiful girl. Go there when you will, and it is with difficulty that you can effect an entrance into the house, and the chances are all against your obtaining a seat. In the day time she dresses very showily, and in the evening appears arrayed in full dress. Her dresses are a little lower in the neck than they might be, but then that is the fashion. The face of the girl is not only her fortune, but the fortune of the man who employs her.

Post-Office Regulations.

By a section of the Sub-Treasury law, it is required that all postages at the different Post Offices throughout the United States, be paid in gold and silver coin, or in Treasury Notes.

Emigration of Paupers.

The Sun, in an article on this subject, says: "Let it once be understood in Europe that all the paupers are emigrating to America, and we may bid adieu to the emigration of those industrious and enterprising foreigners who have hitherto flocked to our shores in multitudes. By emptying their poor-houses and jails upon us, the European monarchies accomplish four objects. They make emigration to America infamous among the better classes of their subjects; they corrupt us by sending their criminals here; they reduce our resources by increasing our taxes for the support of the poor; and lastly, they get rid of the responsibility of supporting alms-houses and prisons."

We hope, however, that our citizens will seek a remedy for this evil in some other way than leaving the wretched, helpless invalids who arrive on our shores, to perish in the streets.

Recent Fires.

At Buffalo the large store of G. B. Walbridge, & Co., 22 Main st. and two stores adjoining. At Wells, Me., the barn and outbuildings of Mr. J. Gitchell, with 12 head of cattle and a number of sheep, It is also reported that Mr. Getchell lost his life, but whether by the fire or otherwise we have not learned.—On Oxford Plain, Mass., the large dwelling house of Widow J. Siblee, with all its contents.—At New Haven, nine buildings—mostly dwelling houses ; most of the furniture saved.—At Lexington, Mass., a new church, nearly finished, belonging to the Unitarian Society.—At East Bloomfield, Ontario Co. N. Y., a woolen factory, situated on Fork Creek, and owned by Messrs. Hinman & Co. At Gardiner, Me. a large store occupied by Winnett and Tucker, Robert Williams, and the publishers of the "Fountain.". At Temple, Me., the Starch Factory of Benjamin Abbott. This factory was fortunately insured *three days* previous to the fire.

Omens of 1847.

The Portsmouth Journal says:—"The observer of signs may look upon 1847 with a fearful face. The year begins with Friday and ends with Friday—that very unlucky day.—The fourth of July comes on Sunday—very unlucky. For the first time in the "recollection of the oldest inhabitant," there will be no full moon this year in the month of February—unlucky month. Our national political day begins on Sunday, the 4th of March,—unlucky day. There will be no eclipse visible in the year—unlucky for the star-gazers..

But there are also some favorable omens, and it may yet prove a very lucky year.

Appearances are Deceptive.

A New Orleans letter writer says : "For many years strangers have been struck by the appearance of a very old and decrepit-looking man, perfectly blind, supporting himself by a cane, and led carefully along by a negro boy, and looking like an object of charity. This man was Judge Francois Zavier Martin, one of the richest men in New Orleans."

A Considerable Army.

The commitments to the city prison (the Tombs) in New York, within the year past, have been about 34,000; the annual commitments having doubled in five years. The prospect is, that in five years more, if the liquor business runs at large in the city, the annual number of prisoners will exceed 100,000.

Road through Missouri.

We understand, says the Hannibal Journal, from a gentleman just arrived from Jefferson City, that there is a good prospect of a road bill passing the legislature this session. This road, it seems now to be universally conceded will terminate at Hannibal Several places on the Missouri are spoken of, Glasgow, St Joseph, Brunswick, and others, as its terminus on that river.

An Excellent Project.

A movement is being made at Worcester, Mass., to erect a new central depot which will accommodate and concentrate the business of all the railroads, and promote the convenience of the public by enabliag all the railroads coming into Worcester to centre at one point. An overwhelming rate of the town has been secured in its favor, and the buildings will probably be put in progress in a few days.

An Owl Trap.

A case is reported of a large owl being the cause of an interruption in a line of telegraph. The owl, it appears, in alighting on the wires, clasped both wires, thus bringing them in contact, whereby he received such a shock as to kill him, or cramp his feet so that he could not let go, and he was found dead hanging on the wires. Might not some of our pigeon hunters take advantage of this hint, and so arrange some elevated electric wires as to retain all the birds that should light on them?

Errors of the Press.

A reporter of a London paper says :—

"I once had occasion to report, that a certain noble lord was confined to the house with a violent cold—next morning I found his lordship represented to 'be confined with a violent *scold*.' In the same way, on occasion of a recent entertainment, I had said that the first point of attraction was her ladyships looks. this compliment was transferred by the printer to her 'ladyship's *cooks*."'

Foolish Management.

Elijah Waters Esq., late of Millbury, Mass. instead of disposing of his property in doing good with it himself, and while under his own control, directed that when *he* could keep it no longer, his executors should give $5000 to a church or Congregational society, $1,600 more to a parsonage thereof, $1,500 to a bible society, $1,000 to Foreign Misssions, and $1,000 to Home Missions.

Very Reasonable.

A good story is told of a soldier in the army whose only fault was that of drunkenness. His Colonel remonstrated with him—

"Tom, you are a bold fellow and a good soldier, but you get drunk."

"Colonel," replied Tom, "how can you expect all the virtues of the human character combined, for seven dollars a month?"

What Queer Authority.

There is said to be a law on our statute books imposing a penalty of $200 upon any persons found guilty of raffling for poultry &c. in this city: nevertheless and notwithstanding that, bold illuminated signs appear in forty places in the principal streets, announcing "Raffling for poultry, watches &c." every evening.

Retaliation.

The people of Hayti have adopted a new constitution which provides that no white man shall hold real estate, or become a citizen of that republic.

This is like the monkey who locked up his nuts in a box to keep them from his master.

Perfectly Right.

We are gratified to learn that Mr. Gould, the energetic conductor of Adams & Co's express, has been complimented with presents from Banks, merchants and others, to the amount of $500 for his noble conduct at the time of the wreck of the Atlantic.

A Curious Fact.

It is stated that the characters on Grave Creek Mound, Va., are identified with the inscription on some ruins lately discovered in Numidia, Africa.

Iron War Vessels.

It is stated that when the British iron steamer was attacked by the batteries of the Argentine republic, the splinters of iron flew more destructively than those of vessels of wood.

Wanting Men back again.

The proprietors of the cotton mill in Schuylerville, N. Y., who reduced the wages of their hands twenty-five per cent., are now endeavoring to induce them to return to their work at the old wages; but they are too late.

A man of sense will never swear. The least pardonable of all vices to which the folly or cupidity of man is addicted, is profanity.

The Hutchinsons have been compelled to abandon their concerts at Philadelphia, in consequence of their songs of American Liberty.

A Boston paper says that 26 ships brigs, and schooners have been reported as missing from that port within six months.

An exchange recommends that the Yankees adopt the social Dutch custom of visiting &c. instead of the puritanic *rigidigidity*.

A shrewd old gentleman once said to his daughter: 'Be sure, my dear, that you never marry a poor man; but remember, the poorest man in the world is one that has money, and nothing else.'

It is stated that every printing press in Virginia is taxed ten dollars a year. Those who voted this tax must have heen fond of ignorance.

The people of Massachusetts annually produce 50 per cent more property or wealth than any equal population in the United States, according to the most accurate returns.

The Missouri river is reported to have but a foot of water on the bars, and still falling, while the Ohio has been up to "high water mark."

The Governor of Missouri recommends in his message, that no man shall become security without the consent of his better half.

A new Cotton Mill and a new Steam Saw Mill are soon to be put in operation within the limits of Northampton, Mass.

There is a family living in Jasper county, Texas, a man, his wife, and mother-in-law, who weigh, together one thousand pounds!

Gun cotton has been introduced in blasting operations on the line of the Vermont Central Railroad.

To keep the hands from chapping let them be rubbed "bright dry,' after every time they are washed.

The Pope has offered a gold medal, value $1000, for the best plan of crossing the great Appenine barrier between Ancona and Rome.

The telegraph rates between Washington and Baltimore have been reduced to less than one cent per word, by order of Government.

Gen Tom Thumb complains that the ladies of England have kissed all the dimples out of his face.

Judge Douglass, one of the Senators elected to Congress from Illinois, is said to be under thirty years of age.

It is mentioned as an extraordinary circumstance that a boy was recently killed in St, Louis, Mo., by the falling of snow from a roof

A new daily paper has been commenced at St. Louis, under the title of the "Morning Post," Its proprietors are all *working men.*

Twenty-five buffalo robes were stolen from the sleighs of parties attending a ball at Lexington, Mass., a few days since.

In 1820, the whole product of the Pennsylvania anthracite mines was 365 tons. It is now 2,300,000 tons.

The rope walk of Thomas Hammond, in Washington street, Portland, was entirely destroyed by fire on Sunday evening.

Babe the pirate is said to have been recently arrested at Liverpool for a violent assault on the mate of one of our packet ships

There is a proposition in the Cincinnati Gazette, to make a tunnel under the Ohio river at that place.

A new and delicious kind of apple, produced in the valley of the Genessee, has taken the name of "the northern spy."

The last curiosity added to the fancy museum is "a tooth from the mouth of a back-biter." It is a hideous old snag.

The nomination of Mr. Bancroft as Minister to England has been confirmed without opposition.

Ten thousand Camanches are reported to have assembled at Little River, near the borders of Texas.

Funds have been subscribed to pay an engineer to examine a route for a railroad from Sandwich to Yarmouth, Mass.

An eastern paper says that "Christmas *passed off* as usual." How very fortunate.

In Mississippi, the law obliges a man to pay the debts of any person he kills in a duel.

The Philadelphia Bank has subscribed two hundred shares to the Pennsylvania rail road.

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CAPTAIN DUSTAN.

UPON THE WRECK OF THE ATLANTIC.

He stood upon the stormy deck,
Erect and bold;
While round his form the white spray dash'd
The surges rolled;
The dark and fearful waters gloomed
Beneath his feet;
And foaming crested billows yawned
His winding sheet.

Yet proudly 'mid the wreck of all
O'er the wild scene,
Towered forth his dauntless form alone
Calmly serene,
And as alternate grief and joy
His bosom thrilled,
It seemed as if the freezing cold
His pulse had stilled.

Yet loud upon the howling blast
His tones were heard;
Till terror-stricken, anguished hearts
With hope were stirred;
The mother bending o'er her babe,
Dismissed her fears;
And while its ringlets waved her brow
Smiled through her tears.

Pale, tearful, drooping sisters, twine
In one caress,
Hushed at its cheering sound their loud
Wails of distress.
Amid the gathering gloom of night
And darkness dim,
The wondering sailors pale with fear,
Gazed up to him.

"Oh, leave thy post of danger, cease
The storm to brave,
Else shall the billows sweep ere long
Across thy grave."
There passed a shade of lofty pride
Over his brow,
And those stern tones that quivered then
Are stronger now.

And while the gathering fires of soul
Lit up his eye,
He cried, "when sinks my ship, I too
With her will die."
In speechless awe they gazed, they sighed
And left him there;
That lofty creature, 'mid the storm
In proud despair.

There rang a fearful shriek of woe
Out on the gloom,
And that frail bark, 'mid dashing seas,
Had found a tomb;
An eddy's foaming whirl, a plunge
Upon the main—
The waves o'er that high heart of faith
Were still again.

The warrior hath his wreath, the king
His triumph hour;
What radiant crown have we for him?
What spell of power?
For nobly hath he flung away
A weary life,
Rather than leave his duty's post,
Amid the strife.

The feeble, fading light of fame,
Is not for him;
The glory of the great of earth,
'Neath *his*, would dim.
No, let his martyr mem'ry be
By all forgot;
For still that lofty name on high
Shall wither not.

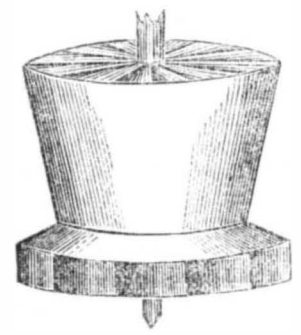
Winter.

'Tis winter, and no more the breeses,
Buzz among the budding treeses;
And whilst the boy with ragged trouses,
Shivering homeward drives the cowses,
Nearly frost-bit are his toeses,
And bless my life how blue his nose is.

Cold in the Southern Hemisphere.

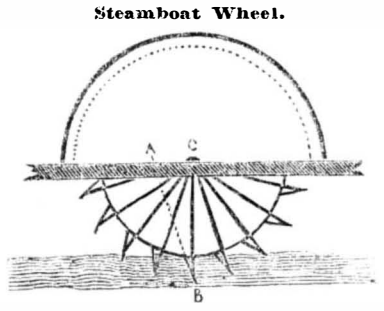
The whale ship Merrimack, of Newburyport, was off Cape Horn on the 4th of July of the present year. Snow storms prevailed, and ice islands were abundant and of great height. The cold was very severe, the thermometer ranging from 40 to 48 deg. below zero. Cape Horn is in South Latitude about 56 deg., and West Long. about 67 deg. This is very cold weather for that latitude.

Goddard's Combined Waterwheel.



This waterwheel (which is a new invention, and as such, should have been arranged under the head of "new inventions" on another page, but the cut was not finished in season) embraces the principles of the spiral-float tub-wheel, and the French turbine wheel, ingeniously combined. The floats in the conical part of the wheel are spiral, and placed at such an inclination as to receive the water at right angles to its direction—the water being received from a semi-spiral shute at the top of the wheel. The lower section of the wheel is larger in diameter, and has floats arranged like those of a turbine or reaction wheel, so that the water escapes at the periphery in the direction counter to the motion to the wheel. The invention embraces some other peculiarities, one of which is a bed-plate below the wheel, and to which are attached elevated ledges, radiating from the centre in curves counter to those of the floats, thus aiding the reacting force of the water. But this, as well as some other slight peculiarities, is of minor importance, and is not represented in the cut, and cannot be fully described without a variety of different sectional engravings. The inventor is Mr. E. Goddard, of Petersham, Mass., who intends to apply for a patent, claiming this combination.

Steamboat Wheel.



The Editor of the Scientific American.

SIR.—I think it would be an improvement in the wheels of steamboats, if, instead of placing the bucket or paddles in a straight line from the centre of the wheel they were placed at an angle of about 15 degrees from the centre. As shown in the above figure; where A B shows the line of the bucket, and C the centre of the wheel, and the angle A B C about 15 degs. For in my opinion, the wheel would have the same, or perhaps greater effect upon the water, and would not raise near so much *back water*, nor have such a tendency to bury the boat in the water. And I think the same principle should be observed in undershot or breast wheels for driving machinery. Please to enquire from some of your practical engineers, and oblige

Yours, M. CLINTON.

REMARK.—The suggestion of our correspondent has been often discussed, but as this position of the paddle would render its plunge into the water difficult and produce a trembling in the boat, it has been hitherto rejected. ED.

A New Fire Ship.

There is now before Congress the plan of a fire-ship, made by Mr. Brown, of Illinois, for marine and harbor defence. It is so constructed as to reflect off shot, while it is capable of enveloping in a single moment, an enemy's ship in a sheet of inextinguishable fire It is not against ships alone that this dreadful engine of destruction might be used, but in land service, in defending passes it is also invaluable.

New Iron-Works.

A large establishment, called the Clinton Iron Works, has been put in operation near Pittsburg, Pa., by Cuddy, Jones & Co. It has eleven furnaces, and will consume twelve tons of pig iron per day in the manufacture of bar, boiler, sheet and all sizes of small iron.

To the Inventors of the United States.

In the last number of this paper the present writer stated that it was probable a new patent law would be passed. But a call for unanimity of sentiment and action has been made as being necessary to produce an effect upon the two Houses of Congress. To still all public opposition to the views of the Committee of the Convention, has been the design of that committee from the first. The present writer has a different opinion. Even a minority, however small, has certain rights, to write, speak and publish their opinions, being responsible only for an abuse of the privilege.

According to a universal law of the God of Nature, good can arise only from a proper balance of opposing forces. There is always a tendency to extremes, as well in making laws, as administering them, and it is never safe to curb the freedom of speech, or of the press, so far as to impose silence on one party, that the other may prevail, because perhaps it has one more idiot in it than the other, and thus the majority carry a question all its own way.

Now, nearly all Inventors admit the leading principles of the law proposed by the present writer, that the inventor's property is as much his, as the property of any other class is theirs, is correct; but many say it is inexpedient to urge this view now, least if we go upon the principle of "asking nothing but what is right, and submitting to nothing that is wrong," the world is in such a low state of civilization that we shall obtain no improvements whatever in the laws, and "half a loaf is better than no bread at all"

This is all very plausible, but it is not entirely satisfactory to at least a few generous minds, who have sworn in their hearts to die, rather than submit to any wrong. Like the Spartans at Thermopyla, they can tell *other* Greeks to yield to numbers if they choose, but *they* cannot. And this is the feeling with which the writer at least, and those who think with him view the proposed submission to public ignorance on the rights nf Inventors. As good citizens, we demand protection under the principle of the common law, which protects all other classes forever, in the enjoyment of the fruits of their labor of mind and body and capital and time, in which life consists, and if the public desire the fruits of the labor and time and capital of a man of genius, who has built a "castle in the air," and after much labor made it a desireable possession, let the public pay for it as if they desired your house, to turn it into a public hall, or to run a road through your garden. Let Commissioners be appointed to appraise its value justly, and let the public pay for it honorably, and not seize upon it at the end of 14 years, or any other time, as a few years ago, even the shipwrecked mariner was a lawful prey.

We are told by one of our most esteemed friends—the orator of the day at the anniversary of the National Association of Inventors—that the public have in effect the right of eminent domain in all the untrodden fields of genius. This, I contend, is conceding too much to false public sentiment, when already many consider patent rights in the light of odious monopolies granted by the Government. He has ably combatted this false impression, and admitted thus the great principle for which I had long contended as above. But now I declare, in behalf of every inventor, that the untrodden fields of nature, the elements above, below, and around us, are open to all to be improved, it is true, and so far they are common property; but the moment one has begun to build his "castle in the air," and to make it valuable, that moment whatever has thus been appropriated and improved, becomes private property; and, unless the public act as in cases where discoveries are made at the public expense in whole or in part, the public have no rights of eminent domain therein until they pay the private owner and occupant a just remuneration. The right does not arise at the end of 14 years to divest the inventor of it, any more than the right arises at the end of that time, after any other man has built a house for his family, to turn that man out and let the inventor in to occupy it rent free. Were this indeed the law, there would be a shadow of right, or color of title to the occupation of the inventor's airy castle in whatever original idea it may consist.

Now, these are just principles. For the sole difference between virtue and vice consists in consulting present expediency at the expense of the future great good. It is short-sighted wisdom, and nothing but the utmost extremity, if even that, should induce a man to admit a false principle for a moment. It is our duty to protest always against wrong.

That no encouragement will be given to inventors by protecting laws, if we speak out boldly is not true. Governments the most selfish will encourage inventors, for, in knowledge and skill is power, and no modern government will act so suicidal a part as to drive to foreign lands the geese who lay golden eggs, for as such, many who have no other art than to watch and rob their nests, look upon inventors; because, as a class, they are more intent on making what is new and useful than in securing it. Some even hold that, as "necessity is the mother of invention," it is the best policy to make inventors poor by law, that they may invent the more. But statesmen look farther, and will pass at least tolerable patent laws, if they only know where the difficulties exist.

Hence there is no real cause of fear that bad patent laws will not be improved. The only cause of apprehension is in the fears of the weak and timid who pretend to interpret the will of savage western members. as having no idea of an inventor's rights of property or public policy. But those bug-a-boos dwindle down very small whenever you ask a statesman of note whether he is as has been reported opposed to benign Patent Laws. Those who thus come between the honest inventor, and the honest far-seeing and true statesman, are most to be suspected of sinister designs.—Let them not be heeded. Let every thing be open and above board. Let every man who has the genius to form an opinion of his own, speak it out boldly. Congress will not be less propitious to any manly appeal.

But our object is not to raise up or pull down individuals. Our leading principle is our only object. Let this be adopted and then the writer will be content, for this "little leaven will leaven the whole lump;" or to change the figure, the troops will follow where the leader goes. The moral courage of one man can dash the hosts of an enemy and give indomitable courage to a handful of men. And be it understood, power is not in numbers, but in genius and moral courage and perseverance.—All things must bow to genius and moral courage at last. Let no individual then despair. What if we fail this season or the next. Time will not be dead in a single year or two. We call then on every true Inventor in the United to rally to the rescue. Never despair, is our motto. Remember what man was until Genius was excited—a naked, trembling savage, dwelling in a cave and groping the earth with his nails for roots to sustain his miserable hairy carcase. It is Genius which has dragged him from the cave and set him in the palace, and where genius is not encouraged, he is still a brute. CLINTON ROOSEVELT.

Battle of the Bees.

On Thursday afternoon, the 18th, a farmer in the neighborhood of Twyn Barlwin Mountain, watching his flocks, when suddenly his attention was attracted by a buzzing noise, and a clound of insects almost to darken the air. Upon closer examination he found the multitude to be engaged in serious warfare, which lasted a considerable time, until heaps of the vanquished covered the ground, some without heads, others minus their wings, and others completely separated into two parts.—They proved to be different sorts of the humble-bee and the honey-bee A friend assured me that he scraped together three or four bushels with his foot, and many persons carried away the slain in basketfull, to show to their friends the result of this unaccountable warfare.—*Monmouth Berlin pap.*

The Yankee shoe makers in England are doing a good business, and the English people are calling loud for lots more to make pegged shoes.

A gentleman undertaking to shave himself took his station before the mirror and commenced lathering the glass instead of his face, and only discovered has mistake when the company present burst into a roar of laughter.

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NEW INVENTIONS.

Letter Printing Telegraph.

We have recently examined a deeply scientific machine invented by Mr. Royal E. House of this city, for the purpose of printing alphabetical characters by the Magnetic telegraph. It is an unfathomable mystery (as well it may be) in the minds even of scientific men, how the electric fluid can be made to produce the different letters of the alphabet at the pleasure of the operator, at a hundred miles or more distant, through the medium of a single wire : but there appears to be no doubt that Mr. House's invention will accomplish it with facility. We have seen this work performed at the distance of several yards, and operated the machine ourselves, and see no reason why it should not work equally well at long distances. About eighty letters per minute can be communicated and fairly printed in Roman capitals. The machine is somewhat expensive and will probably cost $300 each. We are informed that Mr. House has secured patents for the leading principles of the invention, in the United States, and for England, Scotland, Ireland, France, Austria, Belgium and Prussia : but his new machine is an improvement on the first. Prior to seeing Mr. House's machine, however, we had received from a gentleman in Springfield, Mass., a full description with a set of drawings of a machine for the same purpose, and which, as we discover, is based on similar principles to that of Mr. House, but it is in some respects more simple in its arrangement. We shall examine this subject further, and probably procure some engravings whereby we may illustrate the general principles of printing by telegraph.

Thurber's Chirographer.

We some month's since noticed Mr. Thurber's very ingenious machine for writing or forming letters by means of a series of keys which are operated like the keys of an organ. As the inventor's claim in this invention may be interesting to some of our readers, we give it an insertion. The patentee says—" The nature of my invention consists in communnicating to a pen or pencil holder, the motions necessary to delineate any and all letters or other characters, by motions at right angles to each other, obtained by sets of cams, each set being so formed as to combine the right angle movements, and thus generate the vertical, horizontal, oblique, and curved lines required to delineate the letters or characters. Each set of cams is actuated by a separate or distinct lever or handle, as in a piano forte, and the table, with the paper, &c., caused to move forward the required distance at the termination of each letter or character by the return motion of the lever or handle.

Claim—" Having pointed out the principle of my invention, and the manner of constructing and using the same, and indicated some of the variations in construction, which may be made without changing the principle or character which distinguishes it from all other things before known, what I claim as my invention, and desire to secure by letters patent is communicating the motions to the pen or pencil by means of cams acting on frames, so that the vertical and horizontal strokes can be given by separate movements, and the oblique curved strokes by the combined action of the two, substantially as herein described. And I also claim giving to the sheet of paper, or other substance to be written upon, a horizontal movement for spacing off the letters, and a vertical movement for the lines, in combination with the movements of the pen or pencil, substantially as herein described."

New Window Spring.

Mr. George P. Foster, of Taunton, Mass., has invented and is now manufacturing an article which he calls the Friction Window Supporter, and is intended to take the place of window weights. It consists of a spring attached to the sash, which is made to bear upon the inside of the window frame, and thereby holds the sash in any position in which it may be placed, in the same manner as the weight. It has also a catch attached to it, which holds the sash in its place, when the window is closed, and answers as a Fastener ; and as each sash has its own fastener, the upper ones can be let down, and the lower one remain fast.

New Musical Instrument.

A newly invented musical instrument, called a baryton, is exciting a great deal of interest in France. It is between a viola and a violoncello. and is played like the latter instrument. Its four strings are tuned octaves to the corresponding strings of a violin ; and its compass is thus lower by a fourth than the viola, and higher by a fifth than the violoncello The tone has a special *timbre*, which strikes the ear, and is perfectly distince from the viola and violoncello, and thus instrumeutal music has acquired a new organ, which in the quintet and the quartet will vary the effects and add a new speaker to the dialogue of instruments.

Painting on Glass.

A paragraph now and then makes the round of the newspapers to the effect that such a one in Belgium or elsewhere, has discovered some ancient receipt, containing the whole secret of the " long lost art" of Painting on Glass. Now the fact is, that this secret has been in print (and, it is believed, easily accessible) for years :—the only singularity is that though the receipts are given at full length, artists have failed to recognise what was under their very eyes. These seem to have persisted in prosecuting their researches in a wrong direction, misled, probably the term *Painting on Glass* : which has occasioned them to suppose that the splendid red of the ancient windows (the only color which they could not imitate) was produced by the old artists by methods analagous to *painting* in enamel. The fact is, however, that the old artists had nothing whatever to do with producing this color : it was provided for them ready made at the glass house,—in panes, sometimes solid, but generally superficially coated, or flushed, as it is called. When, towards the end of the last century, artists began to revive the art of glass painting, they found little difficulty, save in one color,—the splendid red,—which gives such brilliancy to the old windows. Here lay the secret which they were unable to recover : nor were the glass makers able to assist them—the art having become extinct among them also. Within the last thirty years, however, the glassmakers have tried the old printed receipts ; and have met with such success, that it is supposed nothing but a sufficient demand is wanted to ensure the production of red glass in every way equal to the ancient. It is commonly on sale now, both at home and abroad. The whole secret of the " lost art," consists in this :—that though the deutoxide of copper, when melted with glass. gives a green or sky blue color, the protoxide gives the red in question ; which by reflected light is dingy, but by transmitted light beautifully splendid. The difficulty is, that it requires much skill and practice on the part of the workman to prevent the copper, while the glass is in fusion from taking the additional dose of oxygen, and thus passing from red to green. There is another part of the secret which, which is not a little curious :—that glass, though containing the proper oxide of copper when first taken out of the pot, often shows only a dirty greenish hue ; yet nothing more is needed for throwing out the fine red tint than to expose the blown glass for a few minutes to a dull red heat.

It may be worth mentioning, that French scientific men were so ignorant of the real method, that they obtained, during the Revolution, a large quantity of the red glass from the churches, for the purpose of analysis, at Paris, in the expectation of finding gold. Of course, they found only copper and iron.

Patent Forges.

Several of the blacksmiths of Louisville, Ky. have adopted the improved tew-iron recently invented by Mr. Brewer. By the use of this tew-iron both time and coal are saved, which should induce its adoption by blacksmiths in general.

More Explosives.

It is reported that four large foundries at Albany and Troy have orders for as many bomb shells as they can make in thirty days and nights. The shells are to be 10 inches in diameter and 80 lbs. weight each. The contract is four cts a lb.

On the Manufacture of Steel.

BY DR. CARL SCHAFHAEUTL.

(*Concluded from No.* 15.)

In all treatises on practical chemistry it is asserted that in order to melt steel, it is to be covered with a layer of glass or blast furnace slug ; that the opening of the crucible is luted, or at least becomes firmly fixed during the operation ; these assertions are, however, erroneous. In the first steel manufactories in Sheffield, steel only is put into the crucibles. With regard to the cover, it is evident that it must not adhere to the crucible, as it is necessary that the operator should remove it from time to time with a bar of iron, in order to ascertain the state of the metal.

In order to obtain steel of the best quality, it is not sufficient that the melted mass be run into moulds : the most essential point being to make the casting at the proper time, and for this purpose the operator must be guided by the quality of the steel. This is the duty of the workman, who from long practice can tell the suitable point of fusion, either by simple inspection or by means of his bar of iron, with which he merely touches the surface of the metal, being most careful not to plunge it into the melted mass. As the quality and uniformity of the steel depend in a great measure upon the experience and judgment of the workman who directs the casting, it follows, that even in England a good caster is much sought after and well paid.

It is not difficult, therefore, to explain why so many of the attempts made to establish manufactories of cast steel in Germany have failed, and will again fail Thanks to the errors propagated by technical works, and by the assertions of superficially informed travellers, who have frequently been purposely deceived, it was imagined that in order to obtain English steel of good quality it was only necessary to melt cemented steel in a crucible, and afterwards pour it into moulds, when in a state of fusion.

As soon as a crucible is emptied, it is replaced in the oven ; each crucible serves for one days work, *i. e.* four or five castings, after which it is thrown aside. For ordinary purposes, the steel is run into cast iron moulds, of a prismatic form, previously heated and closed. When the steel is required for making saw blades, plates, &c., it is run into large moulds of parallelopoid form. Steel which is very hard and highly carbonized, contracts considerably in the moulds ; great skill is therefore required to run it into the moulds in such a manner that no vacuum be produced, In that part of the prism corresponding to the jet, a funnel shaped aperture, from one to two inches deep, is formed ; this is detached and melted down with other pieces of steel.

The transverse fracture of a prism of hard steel is silvery, and has a number of rays radiating from the centre ; steel less hard is on the contrary of a uniform granular and crystalline texture. This steel possesses all the brittleness of cast metal.

By fusion, steel of cementation acquires peculiar properties, and does not sweat so much as before casting.

When steel is produced from iron of bad quality, and carburets of a different nature are produced during cementation, the melting, instead of improving it, renders it much worse ; as, in that case, the different carburets of iron which are of inferior quality, separate still more during cooling. This has given rise to an old saying, well known among English founders, that " when the devil is put into the crucible, nothing but the devil will come out.'

It is to the existence of these heterogeneous metallic carburets, which are produced during cementation in iron of inferior quality, and which form new combinations during the fusion of the metal, that the complaints of workmen working in steel are to be attributed. In fact, these carburets being only, so to speak, agglutinated, even in bars of forged steel, each of them, at the moment of tempering, is contracted or dilated more or less than the one immediately adjoining it, so that from that time a separation commencee between the unequally carbonized layers; in other words, a flaw or crack is produced, which may be distinguished by a peculiar noise at the moment when the steel is plunged into water, or, at least, there is a tendency to separation, which only requires the co-operation of an exterior cause, such as a shock, to effect it.—This is often observed in razors, &c.

The transverse fracture of cast steel ought to present a perfectly homogenous surface, when the bar is broken by a sharp blow, after being cut or marked with a chisel. The slight inequalities which are perceptible, ought to be undulating, and to blend insensibly at their bases with the rest of the metallic surface.—When, on the contrary, they stand out perpendicularly, the conclusion may be arrived at that this portion of the bar was the point of contact of two unequally carbonized layers, which, by separating either at the moment of tempering, or at a later period, had inevitably given rise to this rupture.

Suppression of the Smoke of Furnaces.

A report has recently been addressed to the Government, by Sir Henry de le Beche and Dr. Lyon Playfair, respecting the means and effects of preventing the smoke of furnaces.—The following extracts will sufficiently explain the conclusions arrived at.

" The general principles upon which the combustion, or rather the prevention of smoke, may be effected, are now well known, and admitted to be applicable in practice. Smoke consists of vapors produced by the partial combustion or distillation of coal, carrying up small particles of the fuel in mechanical suspension, and depositing, by the combustion of one of their constituents, carbonaceous matter in a fine state of division. The mode of preventing this smoke is to admit a sufficient quantity of air to effect the combustion of the carbonaceous matter, when the vapors are of sufficiently elevated temperature to unite entirely with the oxygen of the air. If the temperature be not sufficiently elevated, the hydrogen of the vapors alone is consumed, and the carbon is separated in the fine state of division referred to. The gases produced by the complete combustion of fuel are colorless and invisible, and therefore do not come under the definition of the term smoke.

" As the prevention of smoke implies the complete combustion of fuel, the result, as an abstract statement, always is, that more heat is generated, and a saving of fuel effected, when it is so consumed as to prevent the emission of smoke ; but although this theoretical conclusion is undoubtedly correct, the practical results are not always consonant with this statement.

" In consuming smoke in the usual way a quantity of cold air is introduced into the fire, and as this must be heated up to the temperature of the surrounding fuel, the loss of the latter may be equal to, or even greater than the saving of the fuel from the combustion of the products of distillation. This often results in the careless use of furnaces constructed on the principle of smoke prevention, and thus leans to the contradictory statements given by those who have used such furnaces.—But in all carefully conducted experiments the saving of fuel has been considerable, and the reason of this will be at once perceived, when it is considered that in addition to the combustion of the products of distillation there is a large amount of fuel saved by the combustion of a gas called carbonic oxide, formed by the proper product of combustion, carbonic acid, taking up, in its passage through he incandescent fuel, another portion of carbon, which escapes useless as regards the production of heat, unless burned by the air introduced at the bridge of the furnace, for the purpose of consuming the products of distillation."

[*To be continued.*]

Decrease of Waters on the Lakes.

It is stated that the navigation to the Sault St. Marie has become extremely difficult, from the low state of the water. The steamer Champion grounded on the flats of Lake George on her last trip down, drawing five ft. four inches water. There is now eight inches less water on these flats than in 1822, when they were surveyed by Lieut. Bayfield.

Ship Building.

We are informed that twelve large ships are in progress of construction, in Bath, Me.—There are excetlent facilities at Bath for ship-building, and no want of capital to carry on the business advantageously.

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NEW YORK, JANUARY 9, 1847.

The Brig Somers.

The history of this "floating gallows," as she was called, the destruction of which was noticed in our last number, is said to have been an eventful one. There have been employed on board of her, men who have averred that she was haunted by the three men who were murdered by hanging at her yard-arm.—Had the cowardly officers who were thrown into such a panic as to hang three helpless men under the pretence of self preservation, been on board at her final catastrophe, the event would have excited less regret.

The daring and devoted exertions of the foreign men-of-war, to aid the crew of the Somers deserves extensive notice in American Journals.

There were lying at Sacrificios, about two miles to leeward of the wreck, H. B. M. ships Endymion and Alarm, and the brig Daring, commanded respectively by Capts. Lambert, Franklin, and Matson; the French brigs Pylade and Mercure, Capts Debut and La Voyaire: and the Spanish corvette Louisa Fernanda, Capt Puente. The crew of the Endymion to the number of two hundred, came aft and volunteered. There was the most noble emulation as to which vessel should use the greatest expedition, and perseverance in the most strenuous exertions. The violence of the gale was such at that time, that none of the boats could pull against it, and it was with the deepest regret that Capt Lambert and others in authority felt it to their duty to make signals recalling their boats. An hour or two afterwards, when there was a slight abatement of the gale, they again put forth at the peril of their lives, and succeeded in rescuing fourteen persons, and bringing from Green Island those who had landed there. The first Lieutenant of the Endymion, Mr. Tarleton, rescued the 1st Lieutenant of the Somers from Pajaros reef, which he succeeded by a miracle in reaching safely, but where his situation was most critical. The most gallant and well directed efforts were made by the officers and crew in the boat of the Mercure. She rescued ten men at sea, to leeward, on a spar.—. One hardly knows which to admire most, the forethought or daring of this noble adventure. The risk was incalculable. Five boats, representing each of the foreign vessels, reached the island, and took of 23 persons to their respective vessels, where they were received with inexpressible kindness and delicate consideration.

A New Invention Wanted.

It is stated in the papers that "Cigars are manufactured in Connecticut by *machinery*." Cannot some ingenious yankee invent some machine for smoking them? Something that can carry off a long nine handsomely in fifteen minutes, or a short six in ten. Such a machine would be a grand desideratum, not only for common dwelling houses, but also for our hotels and public streets. No machine of course would be put up in any bedroom, parlor or dining room, or even a bar room, nor would any be placed near a public walk unless it had such a chimney as is used at the chemical laboratories. They would be generally located in some remote corner of the barn yard, and occasionally removed to the squash plot to destroy the bugs. There is scarce any labor saving machine that would so tend to relieve man from the most disgusting servitude as such an invention. Where is the live yankee who will set about it?—*Portsmouth Jour.*

The Spirit of the Age.

This is the title of a new paper, the first number of which is published to-day, at No. 17 Ann street, by Scoville and Hyatt: *Terms* $1 per annum, in advance. This paper is expressly devoted to the advancement of the temperance cause, and should be liberally and extensively patronized by the temperate portion of the community.

Quere.

What is the cause of the rise of the sap in trees, and is it to be accounted for on the principle of capillary attraction?—*Pen. Mech.*

ANSWER.—It is perfectly obvious that capillary attraction, the force of which can elevate water only a few inches, has very little to do with the rise of sap in trees. The peculiar operation of nature, called vegetation, is performed almost entirely independent of the mechanical laws which constitute the general principles of natural philosophy. The elevation of sap in trees,—which is abundant and flowing in the spring season,—is independent even of a vacuum produced in the pores; because it ascends far above the height to which the atmospheric pressure could raise it. No mechanical form, neither at the roots nor above can possibly operate thereon,—except on the principle that the fibrous roots have not only a powerful affinity for the elements of this vegetable sap which they seek in the earth, but also exert a mechanical action thereon, similar to the pulsation of the heart of animals, whereby these elements are forced into the main roots, and thence through the pores to the extreme point of the branches, where each particle is disposed of and arranged according to the direction of that Power which ordains and maintains the vegetable action in the fibrous roots.—*Ed. Sci. Amer.*

The Wood of the Locust Tree.

The following notes relative to the duration of the locust wood [*Robinia pseudo acacia,*] have been made by M. Pepin, Jardin du Roi, Paris:—A number of trees were felled that had been planted from 40 to 50 years; but not more than one to five of those wheelwrights who came to purchase, appreciated sufficiently the locust, the others preferring elm. Ultimately the locust was sold to the persons who knew its value, at one third higher price than the elm. The purchasers found that spokes made of the wood in question lasted two sets of felloes, and were likely to answer for a third. Under equal circumstances of wear and tear spokes made of locust wood were perfectly sound, while those of oak required to be replaced. M. Pepin further states that the ends of locust gate posts which had been in the soil for upwards of forty years were still not decayed. This sort of wood employed as feet or supports to chests made of oak, proved sound, although the oak plank in contact with them had been thrice renewed; but oak supports decayed simultaneously with the oak planks composing the chests. Vine props of locust wood are greatly esteemed.

Constant Miracles.

There is an eastern story, of a boy having challenged his teacher to prove to him the existence of a God by working a miracle.—The teacher, who was a priest, procured a large vessel filled with earth, in which he deposited a kernel, in the boy's presence, and bade him pay attention. In the place where the kernel was put, a green shoot appeared, the shoot became a stem, the stem put forth leaves and branches, which soon spread over the whole apartment. It then budded with blossoms, which, dropping off, left golden fruits in their place, and in the short space of an hour there appeared a noble tree in the place of the little seed. The youth overcome with amazement, exclaimed, 'Now I know there is a God, for I have seen his power!'—The priest smiled at him and said, 'Simple child, do you only now believe? Does not what you have just seen take place in innumerable instances, year after year, only by a slower process? But is it the less marvellous on that account?'

Present to the Queen.

Our enterprising neighbor, Robert Sears, sends out by the Cambria, a present to Queen Victoria, a complete set,—11 volumes in all—of his splendid pictorial works, including the Pictorial Illustrations of the bible, Pictorial Wonders of the World, Pictorial Description of Great Britian and Ireland, and the Pictorial History of the American Revolution.—Whether the work last mentioned will be considered an appropriate subject for a present to her Majesty, or otherwise, there is no doubt but that the present will be "graciously accepted."

Valuable Intelligence.

A late number of the Ohio Cultivator,—a first rate agricultural paper, by the way,—has the following interrogative correspondence, with the annexed editorial elucidations.

"A BATCH OF JUMBLES.—*Friend Editor*—Farmer of that Little Farm, tell us how big (or how 'little') it is: and whether it has yet a mistress; as every farm and every farmer should have a mistress, if possible. * *

"I have lost six sheep very suddenly this summer, without any apparent cause; and as good sheep as were in my flock of thirty.—I have changed their pasture. Can you point out the nature of the complaint and the remedy? * * * I measured a pumpkin vine that was 280 feet long on the 1st September, from one seed. There has been a monstrous sight of striped bugs in my garden this fall. Sometimes as many as two or three hundred on a single pumpkin (after the frost had killed the leaves.) They eat holes in the pumpkins and live inside. I do not remember ever seeing them in the fall before. I should like to know how to raise squashes without having them degenerate to hard shells or good-for-nothings.

"I have no faith in waiting for or consulting the *moon* before I cut my rails, plant, mow, reap or sow.

"Sincerely yours, CENTRE RAILROAD.

"Delaware Co. Nov 1846."

Remarks.—Well, friend Railroad, we must dismiss your questions with somewhat of a railroad speed:

That little farm is not big at all!—nor is it so very little. It is not very *broad*, but then it is *deep* enough to make it up, as we subsoil plowed it to the depth of 14 to 16 inches; and even in digging a well we found no limit to the depth of the soil! Then, too, it cost as much as some farms of a thousand acres, and we design to make it afford us as much pleasure and profit as the average of such farms do their owners. We cannot as yet boast much of its productions, though we did obtain a splendid premium for potatoes, and our pumpkins and corn, and thousands of young fruit trees are not to be sneezed at by green horns.

But that *mistress* for our farm—what can he mean? Here is Noah Webster, who says the word *mistress* means, 1st, 'a woman who governs'! 2d, 'a female head of a family.' 3d, 'that which governs; a sovereign'! 4th, 'one that commands,' &c. No, no, Mr. Querist, we have no such character at all at all, belonging to or connected with our little farm; nor are we prepared to admit the truth of your assertion that every farmer should have a mistress! But stop; on looking again, we find that father Noah gives still another description of the term mistress, viz. 'a woman beloved and courted'! That's another thing entirely; and if we had only a comfortable domicil to put her in, we should not seriously object to having such an appendage to the little farm. So go to work, kind friends, and swell our subscription list, so as to give us the means to build a house, and we promise you that every fitting appendage shall be added to our little domain.

The only explanation that we can give as to the cause of the death of those sheep, without further *information* respecting them, is like the occasional verdict of the coroners—'died by visitation of providence'!

The *striped bugs*, we have noticed, have been very numerous this fall, and probably an extra supply of them will contrive to find shelter so as to be on hand again next spring, We should be apt to try the effect of a few buckets of hot water upon them, where they had gathered thick upon pumpkins, &c.

To prevent squashes from degenerating, we know of no other method than obtaining pure seeds of a good kind and planting no others, either pumpkins or squashes, nearer than the *farthest distance possible* from them—and this will not entirely prevent it, as bees will carry the pollen from one farm or garden to another, perhaps miles apart.—*Ohio Cult.*

Flying Cotton.

Mr. J. H. Pennington, who has been *trying to fly* for two or three years, has announced his intention of using the explosive power of gun cotton for that purpose. We believe it is as likely to *make him fly* as any thing.

Remarkable Re-animation.

A European paper mentions an instance reported by an eminent Russian physician, of a young girl, who died, apparently, and remained in that state three days; but when the lid of the coffin was about to be screwed down, a slight perspiration was perceived, and she was restored to health. The most interesting part of the circumstances is the account that the girl gave of her own experience during her inanimate state. She said she appeared to dream that she was dead, but was sensible to everything that was passing around her, and distinctly heard her friends bewail her death; she felt them envelope her in the shroud and place her in the coffin. The sensation gave her extreme agony, and she attempted to speak; but her soul was unable to act upon her body. She describes her sensations as very contradictory, as if she was not in her body, at the same instant. She attempted in vain to move her arms, to open her eyes to speak. The agony was at its height when she heard the funeral hymn, and found they were about to nail down the coffin. The horror of being buried alive gave a new impulse to her mind, which resumed its power over its corporeal organization, and produced the effects which excited the notice of those who were about to convey her to a premature grave.

Shovel Handle Manufactory.

The Scowhegan Press says,—H. Johnson & Co., have recently commenced upon the Island in Bloomfield, the manufacture of Shovel Handles, and are now driving a brisk, and we understand, a prosperous business. The experiment was at first considered visionary by many on account of the supposed scarcity of white ash timber; but we now learn that the proprietors have become satisfied that there is a great abundance of that material to be had within a favorable distance of this place, and that the supply will probably exceed the demand for many years to come. The timber is principally of second growth and is of superior quality.

The Mechanics' Journal.

We are in receipt of the fourth number of this paper, and have selected therefrom some interesting intelligence. Our respected contemporaries did not correctly understand our remarks, if they suppose we were apprehensive of their adopting our editorials without due credit. Moreover, we do not claim that *every* article is original that appears in our paper, though we think our readers can generally distinguish between the originals and the borrowed articles We wish the publishers of the Journal ample success to their enterprise.

Gun Cotton.

We have been presented with a beautiful sample of this wonderful article, manufactured by E. W. Kent, practical chemist, 116 John st. This cotton is as white and delicate in appearance, as the raw material, and would not be suspected of having been subjected to chemical process.

Ireland Coming.

It is believed that 200,000 emigrants will leave Ireland next spring and summer for the United States. Preparations are making on a large scale to assist all who wish to leave the Emerald Isle. How very *convanient* it would be to have a *bridge over.*

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

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UNIVERSITY OF THE CITY OF NEW YORK.

The above engraving is a very accurate description of the University. It is situated on the eastern side of the Washington Parade, and presents an imposing front on this beautiful park. It is a noble building, constructed of white granite, and is built in the Gothic style of English collegiate architecture. As a college, it is, in our opinion, the noblest building in the United States, although the Girard College has far exceeded it in cost. The engraving represents the Baccalaureate department, the Medical Faculty occupying the building on Broadway, formerly known as the Stuyvesant Institute. The Institution was chartered in 1831, and opened for students in 1832. It is 180 feet long and 100 feet wide. In front, the oblong is divided into five parts—a central building with wings and flanked towers, one rising on each of the four corners of the edifice, The central building, or chapel, is the largest and most elegant of the whole, and superior in dimensions and character; in some respects similar to that of 'King's College, Cambridge. It is the most splendid piece of suspension architecture on this continent, and is a master piece of this class of architecture. It is in breadth 55 feet, in depth 85 feet, including the octangular turrets, of which it has one on each corner. The two ends are gabled, and are, with the sides, surrounded with an embattled parapet. The doors, which are of oak, are richly panelled, and the principal entrance is under the great western window, through a richly moulded and deeply recessed portal. The principal light of the chapel is from a large window in the west end, which is 50 feet high and 24 feet wide. The value of the building, including the library, (which, however, is very small,) philosophical apparatus, &c., is $400,000.

Extensive Iron Railway Bridge and Viaduct.

An iron bridge, in size and magnificence, perhaps, never before equalled, is about to be erected, with a corresponding viaduct across the Tyne, from Gateshead to Newcastle-upon-Tyne, for the Newcastle and Berwick railway. The iron work contract was let at York. The contractors are to make, supply, and erect, all the cast and wrought iron and wood-work for bridges and approaches, according to the designs, and under the instructions of R. Stephenson, Esq.; it is to consist of six cast iron circular arches, with a curved approach at each end, and will, in fact, be a double bridge; the railroad on the summit, and a carriage road and two foot paths suspended from the arches. The span of the arches will be 125 feet, supported on pillars 21 1-2 feet high, and 14 inches square, and the approaches from both Newcastle and Gateshead will be 251 feet in length, and precisely similar. Two courses of 3 inch planking will be placed beneath the rails, between which will be a layer of Borrowdale's patent asphalted felt, to render them waterproof; and the carriage road beneath will be paved with wood to prevent vibration, and the foot path planked. Every arch will be completely erected on the contractor's premises by it self when the engineer will inspect and test its strength and fitness. The quantity of iron required will be about 6,000 tons, and the contract is stated to be £120,000, The entire cost inclusive of lands and buildings, will be £300,000, and it is to be finished, so as to be available for public traffic, by the 1st of August. 1848.

Loadstone on Lake Superior.

The editor of the Detroit Advertiser has received a letter from J. Houghton Jr. stating that among the many discoveries which have been made in the Mineral Regions of Lake Superior during the past season, there has been one which is of great interest to the man of science. It is the discovery of native Loadstone, a variety of the pleisto-magnetic iron ore. It was discovered by Bela Hubbard, Esq. who was carrying on a geological in connection with a United States linear survey, and who has collected the only specimens ever obtained in that region. He was led to the discovery by noticing the great fluctuations in the bearing of the magnetic needle. Its locality is Middle Island, which is two miles Northwesterly from Presque Isle. The Island is granite, traversed by dykes of greenstone trap, in two of which (having a course nearly north and south,) the Loadstone was found. It is of a crystalline or granular structure, and might by slight examination be taken for a variety of granite. It exhibits polarity. the opposite sides of the same specimen attracting and repelling the north end of the needle. It also attracts iron filings. The Loadstone of different portions of these dykes was observed to exhibit different powers of magnetism

Live Steaks.

The St. Louis New Era states that a live cow was seen in that market recently, from whose hindquarters some inhuman wretch had cut off several pounds of choice flesh, leaving the bleeding animal to suffer the anguish of the wound.

A Heart-rending Scene.

The Natchez Courier in giving an account of the sufferings of those who were scalded at the time of the collision between the Mavia and Sultana says:

"One man would pray to the doctor to cut his throat, another that he might be pierced to the heart, and relieved of his excruciating torment, another that he might be dispatched in any way, to quell the incalculable agony that was consuming him. Shrieks, groans, sobs, and most piercing agonizing howls, were heard on every hand from the 22 sufferers, whom he was ministering to. "Will I live, doctor," said one man, from whom the skin was nearly all peeled. "You will die, sir.—It is perhaps my duty to tell you that you will not live an hour.'

"Well, I am sorry for it," said he "for I leave an aged mother, and several children." In an hour he was dead; and such was the sufferings of every one of these poor victims of a wrath more destructive, more to be dreaded than ten thousand cannon."

National Superstition.

During a thunder storm the Jews open their doors and windows; as it is in a storm they expect the coming of their Messiah. The Cotholics of Suabin and other districts of Germany, toll the bells of their churches to deprecate the effects of lightning; and in Senegal, there is a tribe, who sit at the door of their huts, and take unwearied delight in seeing "the spirit of the world" dart along their plains and mountains of sand.

'These fellows will break my neck yet,' as the felon said when he fell to the ground in consequence of the breaking of the rope.

Carrying the Mail.

The following from the Green Bay Advocate was put on record as a matter of curiosity for future generations:

The Copper Harbor Mail left here on Monday morning last, to make a second trial to get through. It was sent on about two weeks since, but the carrier was taken sick at Menomonee, and the mail was brought back again. It leaves Green Bay once a month, and is carried the whole distance by a man on foot.—For two hundred and fifty miles of the route, there is not a habitation, except, perhaps, a few Indian wigwams, and the mail carrier, in addition to the mail, carries two weeks' food, besides an axe, two blankets, and cooking and eating utensils.

The distance is over three hundred miles, and it takes about two weeks to go through.—If the carrier is taken sick, or lost on his journey, he is alone in the wilderness, far out of human aid, and the non-arrival of the mail at the appointed time will be the only announcement. There are few mail routes in the world whose service is so arduous as this, and few kinds of service requiring the same nerve and courage to undertake it.

Partiality.

The woman who kept the disorderly house, No. 164 Church street, refusing or failing to pay the requisite indulgence bribes to the city police, has been complained of, and held to bail. The other 99 in the same trade have not been molested.

Why is truth more strange than fiction?—Ans. Because there is not so much of it in the world.

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IMPORTANT FROM THE ARMY.

The steamer Fashion, from Brazoo 24th, arrived at New Orleans with eighty discharged volunteers. Gen. Wool's column was within two miles of Paras, numbering 2,900 men. They were ordered there to establish a depot, and levy upon supplies belonging to the Mexican Government. They had already taken a large quantity of flour, wheat and corn. The first and second regiments of the Indiana volunteers, on their march from Camargo, had joined General Wool. Gen. Worth left Saltillo with 1500 men. Gen. Butler left Monterey with 2,000 men. Colonel Quitman's brigade left Monterey for Victoria on the 15th. Gen. Patterson was to leave on the 22d with the Tennessee regiment of cavalry for Tampico via. Victoria. The Alabama volunteers, second artillery, had arrived at Monterey.—Lieut. Col. Henry Clay, with six companies Kentucky volunteers, had reached Seralvo. Capt. Willis, with two companies, at Mier. Gen. Lamar was at Larado. The Mexicans were making successful exertions to raise troops in all the small towns near the Rio Grande. Capt. Stone, with a detachment of seventy men, found two hundred Mexicans at Ranco, on the Rio San Juan, commanded by Capt. Cantron—their particular object being search. Cantron was captured, and also muster roll company, with letters of instruction from Ampudia and Paredes; also a quantity of blankets and amunition was secured. Cantron was taken to Camargo and imprisoned on the 16th. A Mexican was caught entering the magazine at Camargo, with the supposed intent of blowing it up. An express had arrived at Brazos from General Patterson, stating that Santa Anna was advancing on Saltillo, with the intention to cut off General Worth. Four hundred and fifty regulars was to leave Camargo for Monterey on the 20th. A passenger in the schooner H T. Johnaon, at New Orleans, from Tampico, states that an attack was made on the American forces at that place, numbering about 300, by an advance of the Mexican cavalry, nearly seven thousand strong. The American forces opened their park artillery on them, when they speedily fled.

A Female Lothario.

An Irish girl named McCormick, residing in Hamilton, Canada as a servant has been guilty of a series of very strange acts. In her capacity as servant she would with a very art-address ascertain the feelings of almost every lady relative to the tender passion, telling them that Mr.———, a dry goods clerk, or a lawyer, &c. was desperately in love with them, and that he would contrive to see them on a certain night. When the night appointed came, the young gentleman would come, in the shape of Miss McCormick in male apparel. In three different cases was the question popped, and accepted; in one the wedding garment made. This fun was tried once too often, and the gay creature was locked up in jail.

Severe Casualty.

A violent snow storm has occurred at Lexington, Ky., during which a house among the mountains in the vicinity, took fire and a lady and five children perished by the fire and the cold storm. The husband and father was absent at the time.

Important Intelligence.

Dr. Edwards, says an English paper, had ascertained by experiments, that tadpoles, if kept deprived of light, will increase in size, but will never become frogs.

Strength of Materials for Boilers.

The strength or cohesive power of copper plates for boilers, is about 30,000 lbs. per square inch of area. Heated to the temperature of 550 degrees it is weakened one fourth, and at the temperature of 800 degrees one-half- The best iron boiler plates have a cohesive power of 60,000 lbs. per square inch of area, and a common or inferior article one-sixth less. The tenacity of iron increases at a moderate degree of temperature.

TO CORRESPONDENTS.

"P. of Portsmouth," is informed that his questions are easily answered, but that we acknowledge no obligation to answer *anonymous* communications, especially when the answer requires an illustrative cut. The cuts for his answers would cost a dollar.

"P. W., jr."—Cast-iron pipes or pumps, which are bored or made bright inside, may be readily plated with copper or silver, or both combined, in a manner to be durable and preserve the iron from rust, and this by the galvanic process. But in most cases it is quite as cheap to use copper or composition for the body of the pump or pipe. The same with regard to sheet-iron.

"M. E. of C—e."—Your curiosities will be examined, and such as are found "alive," will be duly arranged and presented.

"Old shower-bath maker."—What is the title of that "Old German book?" Where can it be found?

"R. S. T. of B."—Too late for this number, but will receive due attention.

"E. S. 2d."—Business in progress.

"A. C. of N. B."—Atmospheric air in a compressed state, has no more affinity for caloric than in its natural state. It is elastic of itself, independent of caloric; but its expansive force is much increased by the elevation of its temperature. If suddenly compressed and allowed to expand immediately, its expansive force will be nearly equal to the power required for its compression: but if it remain compressed till its condensed heat has radiated, it will suddenly expand to about one-half or two-thirds of its original volume only; but will gradually imbibe caloric from the surrounding air or other objects to strengthen its expansive force till it fills the space it originally occupied. It is not probable that atmospheric air could be reduced to a solid by any amount of pressure.

"T. R. W."—Indicator forwarded as per order.

The Farmer and Mechanic.

We are pleased to observe that the publisher of this valuable paper, has followed our example in reducing the paper to quarto form and otherwise improving its appearance. The 1st number of the 3d volume is well printed and contains a variety of valuable intelligence tor the farmer, as well as for the mechanic. The worthy and enterprising editor, publisher and proprietor, W. H. Starr, Esq. has our best wishes for patronage and success equal to the merits of his interesting paper.

The Cincinnati Brick Machine.

We alluded in a late number to this extraordinary labor saving invention. We have recently had the pleasure of examining a beautiful operating model of the machine, and have no hesitation in saying that it far exceeds our expectation, and must inevitably produce a general revolution in the business of brick making. We shall not attempt a description at present, but shall procure illustrative engravings to accompany a full description in our next number.

From what we have seen of this machine, we have no doubt that it will save more than one-half of the ordinary expense of brick making, and will make much better and stronger bricks than those made in the usual way. Invented and patented by Mr. F. Culbertson, of Cincinnati, Ohio.

A working model is on exhibition at the American Institute in this city.

Growth of Cincinnati.

There have been built in Cincinnati, during the present year, eight hundred and sixteen brick, and five hundred and ninety-nine frame buildings, making in all thirteen hundred and seventy-five.

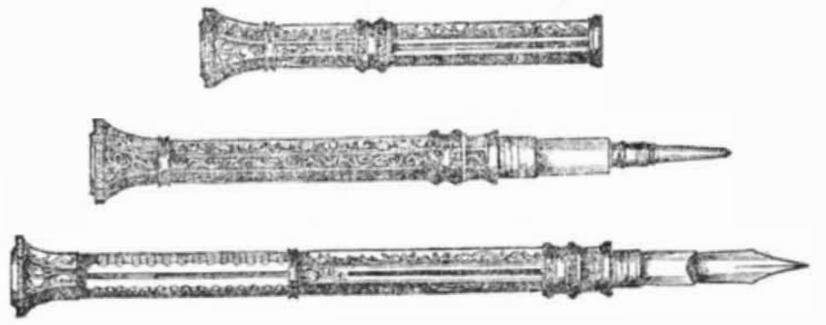
The fly-wheel of the engine used at the Clinton iron works, near Pittsburg, weighs 23 tons, and measures 32 feet in diameter.

Plumb and Level Indicators.

A LARGE LOT of these indispensable articles (for the Carpenter and Mason) is now ready and for sale wholesale and retail, at this office.
Price $1 single.

Engraving on Wood

NEATLY AND PROMPTLY EXECUTED AT the OFFICE OF THE SCIENTIFIC AMERICAN, 128 Fulton st, three doors from the Sun Office. Designs, DRAWINGS of all kinds for PATENTS, &c., also ade, as above, at very low charges



Bagley's Patent Extension Penholder and Pencil.

THIS is the most compact, complete, convenient and useful pocket companion ever offered to the public. The multiplicity of its usefulness and the smallness of its size, renders it a perfect MULTUM IN PARVO.

In the short space of 2 3-4 inches is contained a Pen, Pencil, and a reserve of leads, and by one motion slides either the pen or the pencil out and extends the holder to six inches, which is but little more than half the length, when shut up, of the common pen holder, but when extended is one fourth longer. This article is secured by two patents, and the Manufacturers are now ready to receive orders for them in any quantity, either of Gold or Silver, together with his celebrated ever pointed Gold Pens, which need no proof of their superiority except the increased demand for the last six years, and the numerous attempts at imitation.

A. G. BAGLEY, No. 189 Broadway.
New York, Sept. 1, 1846. o24 tf

ADVERTISEMENTS.

☞ THIS paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the following rates:

One square, of eight lines	one insertion,	$ 0 50
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THE subscriber has established an agency at his warehouse, 12 Platt street, New York, for the protection and general advancement of the rights and interests of Inventors and Patentees.

The objects of this agency are more particulary to aid and assist Inventors and Patentees in effecting sales of their inventions and of goods and wares made therewith—and also for the sale and transfer of Patent Rights.

Arrangements have been made with a lawyer familiar with the Patent Laws, who will attend to the legal branch of the business upon reasonable terms. Satisfactory references will be given. Applications may be made to the undersigned personally, or by letter, post paid. SAMUEL C. HILLS,
j2 3m* General Patent Agent.

BLACK LEAD POTS.—The subscriber offers for sale in lots to suit purchasers, a superior article of BLACK LEAD POTS, that can be used without annealing. The price is low, and founders are requested to make a trial.

SAMUEL C. HILLS,
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BENTLEY'S PATENT TUBULAR STEAM BOILERS.—These boilers offer the following advantages, viz. Cheapness, small consumption of fuel, require but little room, and are set up without masonry or brick work, and are peculiarly adapted for Hatters, Dyers, Bath Houses, &c. &c.

For sale by SAMUEL C. HILLS,
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FASHIONABLE MERCHANT TAILORS.
No. 27 John Street.
d19 3m NEW YORK.

BRASS FOUNDRY.

JAMES KENNEARD & CO. respectfully inform their friends and the public that they are prepared to furnish all orders for Brass and Composition Castings, and finishing in general at the shortest possible notice.

N. B. All orders for Rail Road, Factory and Steamboat work from any distance, will be thankfully received and attended to with despatch and on reasonable terms.

☞ Patterns made to order.

JAMES KENNEARD & CO
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Branwhite's Patent Color Discriminator.

☞ This ingenious invention consists of a neat box in which are arranged in a scientific manner, all the most brilliant colors, THIRTY FIVE IN NUMBER, represented by as many convex discs of the FINEST SILK. Each disc bears a number referring to an explanatory scale. The attention of storekeepers, milliners, and indeed all who have occasion to vend or purchase colored articles of any kind, is respectfully invited to this new and valuable discovery. More trouble can be saved by its use in ONE DAY than four times the amount of its cost. For sale, wholesale and retail, at the office of the Scientific American, 128 Fulton st., 3 doors from the Sun Office.

They may be sent by Express, to any part of the United States. oct31 tf

AMERICAN AND FOREIGN PATENT AGENCY,

No. 23 Chambers street, New York.

JOSEPH H. BAILEY, Engineer and Agent for procuring Patents, will prepare all the necessary Specifications, Drawings, &c. for applicants for Patents, in the United States or Europe. Having the experience of a number of years in the business, and being connected with a gentleman of high character and ability in England, he has facilities for enabling inventors to obtain their Patents at home or abroad, with the least expense and trouble.

The subscriber, being practically acquainted with all the various kinds of Drawing used, is able to represent Machinery, Inventions, or Designs of any kind, either by Orthographic Drawing, or in Isometrical, Parallel, or True Perspective, at any angle best calculated to show the construction of the Machinery or Design patented.

To those desiring Drawings or Specifications, Mr. B. has the pleasure of referring to Gen. Wm. Gibbs McNiel, Civil Engineer, Prof. Renwick, Columbia College, Prof. Morse, Inv. Tel.

Residence, No. 10 Carroll Place; office No. 23 Chambers street, corner Centre. oct. 10 tf

ELECTRICITY.

SMITH'S CELEBRATED TORPEDO, OR VIBRATING ELECTRO MAGNETIC MACHINE—This instrument differs from those in ordinary use, by having a third connection with the battery, rendering them much more powerful and beneficial. As a CURIOUS ELECTRICAL MACHINE, they should be in the possession of every one, while their wonderful efficacy as a medical agent, renders them invaluable. They are used with extraordinary success, for the following maladies.

RHEUMATISM—Palsy, curvature of the Spine, Chronic Diseases, Tic-doloureaux, Paralysis Tubercula of the brain, heart, liver, spleen, kidneys, sick-headache.

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DEAFNESS—Loss of voice, Bronchitis, Hooping cough.

These machines are perfectly simple and conveniently managed. The whole apparatus is contained in a little box 8 inches long, by 4 wide and deep. They may be easily sent to any part of the United States. To be had at the office of the Scientific Americcan, 128 Fulton st, 2nd floor, (Sun building) where they may be seen IN OPERATION, at all times of the day and evening. 2

COPPER SMITH!—The subscriber takes this method of informing the public that he is manufacturing Copper Work of every description. Particular attention is given to making and repairing LOCOMOTIVE tubes. Those at a distance, can have any kind of work made to drawings, and may ascertain costs, &c., by addressing L. R. BAILEY,
cor. of West and Franklin sts., N. Y.
N. B.—Work shipped to any part of the country.
45to2dv18*

Lap-welded WroughtIron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York.

NOTICE.

TO COTTON & WOOLEN MANUFACTURERS.

THE subscriber will furnish to order his Improved Cotton Willow and Wool Picker. It is warranted to do more work and much better in quality, with less outlay of power than any other machine in use, also the repairs required are much less on the machine itself and the succeeding machinery, the cotton or wool being so perfectly opened there is much less strain upon the card, clothing, &c., &c. It has been introduced into more than 60 of the best Mills in New England and quite a number of them have stated to me that they save the expense of the machine in a few months in WASTE ALONE, when much stock is used. EDMUND BACON,
Superintendant of Elliot Mills.
d12 6m. Newton Upper Falls, Mass.

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Improvements in Embossing, &c.

(*Concluded from No.* 15.)

The patentee remarks, that he is aware, that paper for paper hanging and other purposes, has before been embossed, therefore, no claim is made for the same ; this part of the invention being for forming moulding for preparations of fibrous materials and embossing them by rollers.

He proceeds to describe the second part of his invention which consists of using calico, or other woven fabric with papier mache, or other pulpy or plastic preparation of fibres, by which strength will be obtained by the woven fabric, and substance by the preparation of fibrous. In carrying out this part of the invention, he employs one or more thicknesses of woven fabric, and coats this thickly with any thick pulpy or plastic preparation of fibrous material, and then paste, or otherwise cement, a sheet or more of damp paper over such composition, and the fabric thus produced is subjected to pressure in moulds, so as to obtain the desired embossing, or the fibrous plastic or pulpy material is placed between several surfaces of woven fabric. By these means embossed articles, similar to those of paper mache may be produced much stronger than paper mache, and also mouldings, plain or embossed, according to the first part of the invention; in making articles similar to articles of paper mache, the fabric should be used in a partially moist state, and that the impression should be produced by a repetition of pressure between moulds, drying the articles out of the moulds in stoves, between the processes of pressing in dies or moulds, giving the last pressure when the article is nearly dry, by which the pattern of embossing may be brought out very sharp, and the same may be retained, and very strong in consequence of using woven fabrics. In some cases it is desirable to thicken the edges of the articles by applying paper mache, or other plastic, preparation of fibres at those parts, leaving the other parts of the articles thin, in which case the dies or moulds are made accordingly. The object of thus applying greater thickness of matter at the edges of articles is to obtain great strength and stiffness of a given quantity of material used. In carrying out this part of the invention the article is pressed in a mould with one forcer, so as to produce the face surface correctly ; having taken the article out of the mould, and partially dried it, it is subjected to a second pressure in the mould with the same forcer,—a quantity of paper mache, or other plastic preparation of fibres, rolled or formed into a sheet, is applied at the back and with another forcer formed to correspond with the extra thicknesses desired to be obtained, another pressure is given to the article in the mould. and thus are extra thicknesses obtained to any part of the article. This part of the invention is applicable when making articles of thick paper, the paper, having received its first impression, is to be treated as above described.

The third part of the invention consists of the use of India rubber in combination with glycerine, glue, and treacle (when preparing a plastic matter from fibrous materials,) to be placed on or between paper, calico, leather, or other fabric, to be embossed, so as to obtain articles similar to papier mache, or for producing mouldings according to the first part of the invention.

In carrying out this part, India rubber, dissolved in a suitable solvent, or fibrous materials may be combined therewith without solvent, but a solvent is preferred ; and such dissolved India rubber is mixed with treacle and glue, and fibrous materials, by grinding or kneading them in a machine, such as is now commonly employed for preparing India rubber, the glue having been first rendered into jelly by water. Equal parts of India rubber and glue are used, and a quantity of treacle equal to about one quarter of the other matters combined. A small quantity of glycerine combined with the mixture it will retain a more plastic state, and the fibrous material to be used is rag dust, obtained from makers of fine paper ; but these details may be varied.

A preparation of fibrous materials is also made to be used in like manner, by combining the use of India rubber, and gluten of wheat or other flour, and may be employed in about equal parts. These matters are combined with fibrous materials, as above explained, so as to obtain a plastic preparation, of the consistency desired, for making articles in moulds, in the manner of papier mache. and such preparation may be used alone as papier mache, or combined between or on the surfaces of paper, leather. calico, and other woven fabrics.

Having thus described the nature of his invention, and the means pursued by him in performing the same, the inventor would have it understood, that he does not confine himself to the precise details herein described, as long as the peculiar character of either part of the invention be retained. But what is claimed is—

Firstly, the manufacture of mouldings from paper, calico, and other woven fabrics, and from any suitable preparation of fibrous materials in a plastic state ; and also from leather, combined with other matters, by the employment of a roller or rollers, as herein described.

Secondly the use of woven fabrics, when combined with paper, papier mache, or other plastic preparation of fibre, in the manufacture of mouldings, and embossed articles similar to papier mache. Also the giving extra thicknesses, by applying papier mache, or other plastic preparations of fibrous materials, as herein described.

And, thirdly, the application of India rubber, combined with glue, treacle, glycerine, or gluten, in preparing plastic matters of fibrous materials, when made in articles, by pressing in moulds, or embossing by rollers, as herein described, whether used separately, or combined with leather, paper, calico, or other woven fabrics.

Persian Mechanics.

The natural talents of the Persians have found exercise in the career of industry. In the seventeenth century the art of embroidering on cloth, silk and leather, was carried to a high degree of perfection. There were manufactories of pottery in every part of the kingdom, some of which possessed the property of resisting fire, and was so hard and tough that mortars were made of it, in which hard substances were pounded. The porcelain of Kerman is renowned for its lightness and elegance, and it was from this province that the Murrhine vases, mentioned by Pliny, came. The manufactures of leather, shagreen, and morocco, are as old as the Parthian kings, are still in a flourishing state. Their edged instruments, as swords and razors were much esteemed, as well as their bows. They also arrived at great excellence in the manufacture of silk, cotton and woollen stuffs. The carpets so highly valued, and known as Turkey carpets, were manufactured in Persia, and derived their name from passing through Turkey to market. The sabres of Khorazan are damascened with gold, and cost from 60 to 150 dollars. These blades do not bend ; the fine quality of the steel is known by its waving, cloudy streaks. Among the Persians as well as the Turks, all metals are hammered cold ; even the horseshoes are made in that manner. This is said to give them greater selidity.—They possess besides many arts in an eminent degree of perfection. At a very remote period they excelled in the art of cutting precious stones, and in dyeing colors which united brilliancy with durableness, and they are represented by recent travellers as being still acquainted with the silvering of glass, and the cutting of diamonds ; and do not seem to have lost any of the arts which they practiced two centuries ago, but have acquired some new ones, such as the art of enamelling, which they execute very well. The powers of imitation and invention, as displayed in the arts of painting and statuary, are not proscribed in Persia, as they are in Turkey ; and were it not that Turkey intervenes as a barrier between European light, and the genius of the Persians, we should probably find this Asiatic nation making an extraordinary step of advancement in the arts and sciences.—*Mech. Jour.*

SCIENTIFIC MEMORANDA.

[Communicated for the Scientific American.]

(The following items of useful intelligence, are very acceptable, notwithstanding that the substance of some of them have appeared in our columns before. The author has our thanks.—Ed.)

A series of experiments made in France has resulted in the discovery of means of forcing into the pores of wood liquids capable of giving to it great durability and entirely new properties. The process consists in the introduction of solutions by a sort of filtration. A tub containing the liquid is placed in contact with one end of the wood ; the pressure produced by raising the level of the liquid a little above that of the wood, suffices for its perfect impregnation, with the exception of the central part or heart. Some of these pieces of wood were left in their natural state ; others were impregnated to only half their length, and others in their entire length The liquors used were pyroligneous acid, sulphate of copper, chloruate of pyrolignated calcium, double chloruate of sodium and mercury. The woods were buried in the ground at the depth of a few feet, in an enclosed yard, where they remained three years. On taking them up the prepared wood was found sound, but that which was not prepared, entirely rotten.

We perceive in a French paper an accouut of the engraving on some seals of eminent Roman oculists, which have been recently discovered. It appears that the Roman oculists had engraved upon these seals the names of the remedies for diseases of the eyes which were then in vogue.

M. Persigny has expressed an opinion before the Paris Academy of Sciences, that the pyramids of Egypt were erected for the defence of the valley of the Nile against the eruptions of the sand of the desert. A simple wall, in his opinion, would have been only a temporary obstacle, which the winds would have soon surmounted ; but the pyramids are of a form and arrangement which oppose to the current of air a resistance equal to the rate at which it displaces the sand, consequently the siliceous particles, having no support, fall at a considerable distance from the wonderful buildings established by the Egyptians. The results of several experiments made on a small scale, were presented in support of the theory. A small ventilator represented the winds of the desert, and on a plank covered with sand, are little pyramids in pasteboard. With this small apparatus M. Persigny described all the effects which he supposed to result from the gigantic monuments of Egypt.

Corn spoiled in the holds of vessels, by a prolonged contact with sea water, is found to contain large quantities of valerianic and butyric acid.

Compressed air has been used in England as a means of driving back the masses of water which are found in mines.

A watch which marks the degree of heat and moisture, in addition to the keeping of time, has recently been invented in France.

It has been ascertained by experiments recently made, that the addition of muriate of ammonia to the water in the boiler of a steam engine not only prevented incrustation, but disintegrated and removed the incrustation already formed.

The width of the Isthmus of Panama at different points, by actual survey recently completed by a French engineer, is found to be as follows: From the town of Panama to Chagres the distance in a straight line is 40 1-2 miles. Vrom the mouth of the Caimato on the Pacific ocean the distance is only 13 1-2 miles. West of Panama to the embouchure of the Chagres on the Atlantic the distance is 36 miles ; but the minimum width is a little more to the eastward, between the bay of Mandingo or San Blas, on the Carribean sea, and the shore of the Pacific ocean, near the embouchre of the Rio Chepo, the distance is 31 miles.

A person in Sheffield, England, has recently invented a substitute for the ordinary church bell. It is a circular plate or disc of steel.—These plates have a much louder tone and are heard at a greater distance than the common church bell of the same weight.

The intensity of reflected light is very small when compared with that which proceeds directly from luminous bodies. M. Bonguer, a French philosopher, who made a variety of experiments to ascertain the proportion of light emitted by the heavenly bodies, concluded from those experiments that the light transmitted from the sun to the earth is at least 300,000 times that which descends to us from the full moon, and that of 300,000 rays which the moon receives, from 170,000 to 200,000 are absorbed. Hence we find, that however brilliant the moon may appear at night, in the day time she appears as obscure as a small portion of dusky cloud to which she happens to be adjacent, and reflects no more light than a portion of whitish cloud of the same size. And as the full moon fills only the ninety thousandth part of the sky, it would require ninety thousand moons to produce as much light as we enjoy in the day time under a cloudy sky.*

A tanner at Tyman, in Hungary, completely preserves raw hides from putrefaction, and restores those that are tainted, by applying to them with a brush a layer of pyroligneous acid. They absorb it very speedily, and it occasions no injury or diminution of their value.

The King of Sardinia has placed at the disposal of an English Engineer the enormous sum of £80,000, for the immediate erection of workshops and yards for the construction of locomotives and steam engines, at Genoa.

All Patents in England are issued for 14 years, except when the term is extended by the crown, which seldom occurs. The whole expense of a registration is £14

*There is a palpable absurdity in the idea of calculating the number of moons that would be required to illuminate the earth equal to the sunlight, since it is well known that the earth is vastly more luminous than the moon itself. It might as well be calculated how many gallons of boiling water would be required to produce a red heat.—Ed.

(*To be continued.*)

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